	Application No.	Applicant(s)
Notice of Allowability	09/802,787	KHANNA ET AL.
	Examiner	Art Unit
	Herng-der Day	2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Amendment received 10/27/06*.

2. ☒ The allowed claim(s) is/are *1-8, 11-18, and 20-24, now renumbered as 1-21*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

       1. ☐ Certified copies of the priority documents have been received.

       2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

       3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the

          International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

       1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

       Paper No./Mail Date 20070105.

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *20070105* .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

1.   This communication is in response to Applicant's Amendment to Office Action dated

July 27, 2006, faxed October 27, 2006, and telephone interview with Mr. Thinh V. Nguyen (Reg.

No. 42,034) on January 5, 2007.

1-1.   Claims 1, 7, 11, 14, 15, 18, 20, 21, and 24 have been amended. Claims 9, 10, and 19

have been cancelled. Claims 1-8, 11-18, and 20-24 are pending.

1-2.   Claims 1-8, 11-18, and 20-24 have been examined and allowed.

EXAMINER'S AMENDMENT

2.   An Examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to Applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

3.   Authorization for this Examiner's amendment was given in a telephone interview with

Mr. Thinh V. Nguyen (Reg. No. 42,034) on January 5, 2007.

4.   The claims have been amended as follows:

4-1.   Replace claim 1 as follows:

1. (currently amended) A method, comprising:

        generating an object-oriented abstraction corresponding to a root bus referencing a

method that obtains and/or generates configuration and resource allocation information for the

root bus and a subordinate bus connected to the root bus; and

registering the method referenced in the object-oriented abstraction via a data structure

stored in a memory, the data structure including ~~an~~ a globally unique identifier (GUID) of the

root bus, a handle that includes the GUID and stores a reference to the GUID of the root bus, and

a pointer to the root bus.

4-2.   Cancel claim 9.

9. (canceled)

4-3.   Cancel claim 10.

10. (canceled)

4-4.   Replace claim 11 as follows:

11. (currently amended) ~~The~~ A method ~~of claim 10, further~~ comprising:

identifying each of a plurality of root buses;

defining an object oriented representation of each root bus comprising a set of

components that includes references to a plurality of methods that obtain and/or generate

configuration and resource allocation information for that root bus and at least a subordinate bus

connected to the root bus;

assigning a bus identifier for the at least subordinate bus through use of an enumeration

process that implements one or more of the methods referenced by the object oriented

representation of the root bus, the object oriented representation including a globally unique

identifier (GUID) for each root bus;

creating a handle; and

storing references corresponding to the GUIDs for each root bus in the handle.

4-5.   Replace claim 14 as follows:

14. (currently amended) The method of claim [[9]] 11, wherein each root bus and the at least

subordinate bus connected to the root bus form a hierarchy, and wherein the enumeration process

for each root bus comprises:

assigning bus identifiers as the at least subordinate bus is reached while moving

downward through the hierarchy; and

calculating resource requirements for the at least subordinate bus while moving back up

the hierarchy.

4-6. Replace claim 15 as follows:

15. (currently amended) The method of claim [[9]] 11, further comprising:

determining resource requirements for the at least subordinate bus;

allocating the resource requirements for the at least subordinate bus; and

setting resources for the at least subordinate bus.

4-7. Replace claim 18 as follows:

18. (currently amended) The method of claim [[9]] 11, further comprising:

evaluating devices in the hierarchy of the root bus to determine if the root bus produces a

firmware device or an optional ROM that includes BIOS corresponding to a bootable device.

4-8. Cancel claim 19.

19. (canceled)

4-9. Replace claim 20 as follows:

20. (currently amended) The article of manufacture of claim 19 24, wherein the computer-

executable instructions comprises one or more software modules including a root bus driver.

4-10. Replace claim 21 as follows:

21. (currently amended) The article of manufacture of claim ~~19~~ 24, wherein execution of the instructions further performs operations comprising assigning a bus identifier for the subordinate bus through use of an enumeration process that implements the method referenced by the object oriented abstraction of the root bus.

4-11. Replace claim 24 as follows:

24. (currently amended) ~~The~~ An article of manufacture ~~of claim 19 wherein execution of the instructions further performs the functions of:~~ comprising a computer-readable medium having computer-executable instructions that when executed perform operations comprising:

generating an object-oriented abstraction corresponding to a root bus referencing a method that obtains and/or generates configuration and resource allocation information for the root bus and a subordinate bus connected to the root bus;

registering the method referenced in the object-oriented abstraction via a data structure including a globally unique identifier (GUID) of the root bus and a pointer to the root bus;

creating a handle; and

storing references corresponding to the globally unique identifier (GUID) for the object-oriented abstraction and a pointer to the object-oriented abstraction in the handle.

5. The drawings have been amended as follows:

5-1. FIG. 1 and FIG. 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Reasons for Allowance

6. The following is an Examiner's statement of reasons for allowance:

6-1. The closest prior art of record discloses:

(1) A new bus architecture based on abstraction layers (The FreeBSD Documentation Project, "FreeBSD Architecture Handbook, Chapter 14 Newbus").

(2) A method for identifying and configuring computer hardware (Furner et al., U.S. Patent 5,974,474).

(3) A method for accessing devices through use of an abstraction layer interface (Khanna, U.S. Patent 7,124,226 B2).

6-2. The prior art does not expressly teach or render obvious the invention as recited in the independent claims 1, 11, and 24.

Generating an object-oriented abstraction corresponding to a root bus or defining an object oriented representation of root bus as well as registering a method and creating handle are obvious as disclosed in the prior art of record. However, the limitation "registering the method referenced in the object-oriented abstraction via a data structure stored in a memory, the data structure including a globally unique identifier (GUID) of the root bus, a handle that includes the GUID and stores a reference to the GUID of the root bus" or its equivalent limitations as recited in the context of independent claims, was not uncovered in the prior art teachings.

Moreover, as the courts have held that "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) and "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim,

but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

Nor was a reference uncovered that would have provided a basis of evidence for asserting a motivation that one of ordinary skill in the art at the time the invention was made, knowing of this specific environment in generating an object-oriented abstraction corresponding to a root bus or defining an object oriented representation of root bus, would have applied a data structure including a globally unique identifier (GUID) of the root bus, a handle that includes the GUID and stores a reference to the GUID of the root bus, or its equivalent, as recited in the context of the independent claims.

Dependent claims are allowed as they depend upon allowable independent claims.

7.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

8.   Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Herng-der Day whose telephone number is (571) 272-3777. The Examiner can normally be reached on 9:00 - 17:30.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: (571) 272-2100.

   If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Kamini S. Shah can be reached on (571) 272-2279. The fax phone numbers for the

organization where this application or proceeding is assigned is (571) 273-8300.

   Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Herng-der Day
January 5, 2007   *H.D.*

KAMINI SHAH
SUPERVISORY PATENT EXAMINER